

(12) United States Patent

Gomibuchi et al.

May 2, 2017 (45) Date of Patent:

> 2105/04 (2013.01); B29K 2995/0088 (2013.01); B29K 2995/0089 (2013.01); B29L

US 9,636,854 B2

(54) METHOD FOR PRODUCING SKIN-COVERED FOAMED MOLDED ARTICLE AND RESULTING PRODUCT

(71) Applicant: **JSP CORPORATION**, Tokyo (JP)

Inventors: Masahiro Gomibuchi, Kanuma (JP); Tomoo Tokiwa, Kanuma (JP)

Assignee: JSP CORPORATION, Tokyo (JP)

(*) Subject to any disclaimer, the term of this Notice: patent is extended or adjusted under 35

U.S.C. 154(b) by 73 days.

(21) Appl. No.: 14/833,794

(22)Filed: Aug. 24, 2015

Prior Publication Data (65)

> US 2015/0360401 A1 Dec. 17, 2015

Related U.S. Application Data

(62) Division of application No. 13/839,114, filed on Mar. 15, 2013, now Pat. No. 9,193,099.

(30)Foreign Application Priority Data

Apr. 23, 2012 (JP) 2012-97336

(Continued)

(51) Int. Cl. B29C 44/18 (2006.01)B32B 5/20 (2006.01)

(52) U.S. Cl.

CPC **B29C 44/18** (2013.01); **B29C 44/12** (2013.01); B29C 44/3492 (2013.01); B29C 44/445 (2013.01); **B29C** 67/0037 (2013.01); **B29C** 67/205 (2013.01); **B32B** 3/04 (2013.01); **B32B 5/18** (2013.01); **B32B 5/20** (2013.01); C08J 9/0061 (2013.01); C08J 9/228 (2013.01); B29K 2025/06 (2013.01); B29K

2009/00 (2013.01);

(Continued)

(58) Field of Classification Search

(10) Patent No.:

CPC B29C 44/04; B29C 44/146; B29C 44/18; B29C 44/1204; B29C 44/445; B29C 49/4273; B08L 2205/025

USPC 264/45.4, 46.6, 265, 267, 523, 573 See application file for complete search history.

(56)References Cited

U.S. PATENT DOCUMENTS

4/1974 Eisenberg 3,801,244 A 5,037,592 A 8/1991 Erlenbach (Continued)

FOREIGN PATENT DOCUMENTS

0583542 A1 2/1994 EP 12/1994 JP H06-339979 A (Continued)

OTHER PUBLICATIONS

European Search Report for corresponding EP 13001386 dated Aug. 19, 2013.

(Continued)

Primary Examiner - Atul P. Khare (74) Attorney, Agent, or Firm — Bacon & Thomas, PLLC

(57)ABSTRACT

A method for producing a skin-covered foamed molded article includes blow molding a parison into a skin and heating expanded polystyrene beads filled in a hollow space of the skin to form a foam layer fuse-bonded to the skin, polystyrene resin composition having specific Charpy impact strength, MFR and branching degree. The skin of the skin-covered foamed molded article is formed of the specific polystyrene resin composition.

13 Claims, 1 Drawing Sheet

